

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001159**Date Inspected:** 22-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 1400**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2330**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Li Xiu Yang**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower Mock Ups, OBG components**Summary of Items Observed:**

The Caltrans Quality Assurance (QA) inspector, Scott Croff, was present at Zhenhua Port Machinery Company, Ltd (ZPMC) to observe the scheduled mock up construction and production construction of the SAS Superstructure.

Bay 2: Upon the QA inspector's arrival to Bay 2, the QA inspector observed ZPMC technician Li Li Ming conducting ultrasonic testing (UT) on a complete joint penetration (CJP) weld on the lower 114 meter mock up assembly. The QA inspector identified the joint as MWT-70. The UT was being conducted prior to the QA inspector's arrival and the QA inspector observed the remainder of the testing. The QA inspector noted that testing was being conducted from face "A" and face "B" only. The QA inspector observed that no testing (straight beam or shear wave) has been conducted from face "C." The QA inspector made observations of the welds appearance and noted that the weld appears to be visually non-conforming to AWS D1.5 2002 requirements. The QA inspector measured the weld reinforcement at 4mm to 5mm in height, where AWS D1.5 requires the weld reinforcement to not exceed 3mm. Upon completion of UT by Li Li Ming, the QA inspector observed the technician mark the weld as acceptable. The QA inspector then spoke with the Quality Control Liaison (QCL) "Tom" Li Xiu Yang, regarding the observed UT. The QCL was shown the Contract Special Provisions, section Steel Structures, subsection Inspection and Testing, states that scanning for ultrasonic examination of corner welds in materials thicker than 50mm shall include base metal behind and adjacent to the welds. The QA inspector noted that the materials joined are 100mm and 90mm thick. The QCL stated that he would discuss this requirement with the technician.

Bay 4: The QA inspector conducted 10% verification of T-stiffener fillet welds using magnetic particle testing

WELDING INSPECTION REPORT

(Continued Page 2 of 3)

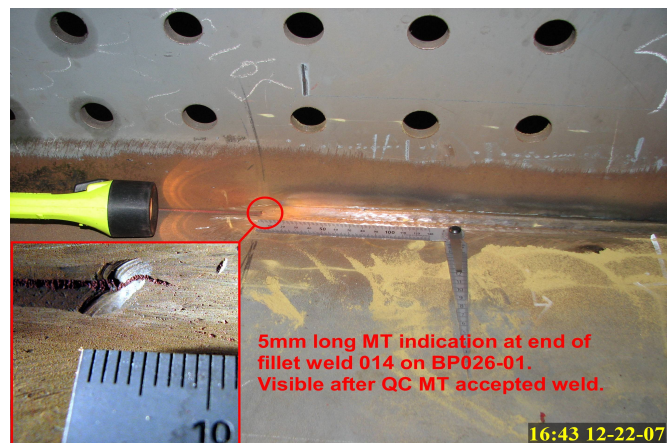
(MT). The QA inspector observed a relevant indication that measured 5mm long and appeared to be a crack following the center-line of the fillet weld from the splice connection end of the T-stiffener on BP026-01 weld 014.

The QA inspector showed this indication to the QCL "Tom" and "Eric" Xu Jun. They agreed that this observed indication was a crack and they informed the QA inspector that it would be repaired. The QA inspector noted that this indication was observed on a section of the weld that was already inspected by MT, there were yellow magnetic particles visible on the indication. The QA inspector noted that this part, BP026-01 is marked as "MT Acceptable" by ZPMC technician Cai Xin Xin. The QA inspector observed ZPMC workers being shown the indication and preparing to remove the indication by grinding. Upon the completion of this shift, the QA inspector noted that only 20mm of the fillet weld have been ground back. See the attached TL-6028 report for more information. See the attached photo.

Bay 7: The QA inspector observed ZPMC workers straightening a floor beam assembly FB007-03 along weld 021.

The QA inspector noted that a large weight is placed along the weld and wooden blocks have been set under the opposite side of the weld to induce a curve along the weld. The QA inspector noted that a torch is being used to apply heat along the weld. The QA inspector reviewed the form that was observed being used by the ZPMC workers. The form appears to have been approved by A.B.F. and describes the warpage/distortion along this weld at a maximum of 23mm. The QA inspector photographed this form as it appeared. The QA inspector is not aware of an approved heat straightening report for this observed work.

The QA inspector observed ZPMC workers preparing to straighten a floor beam assembly FB016-02 along weld 021. The QA inspector made random observations of the warpage/distortion of the 12mm thick plates along the weld. Using a 1 meter straight edge that was available at the work location, the QA inspector measured bowing between 6.0mm and 22.7mm across 600mm of plate from the weld edge. The QA inspector also measured cupping across a section of plate that appeared to have a maximum depth of 8.5mm, for a length of approximately 2500mm. See the attached photo.



Summary of Conversations:

As noted above, the QA inspector Scott Croff had conversations with the QCL "Tom" Li Xiu Yang and the ZPMC technician Li Li Ming regarding the observed UT and the contract special provisions requirements. The QCL was asked the question to translate to Li Li Ming and the QCL was shown the contract special provisions. After showing the QCL the contract special provisions, the QCL informed the QA inspector that he would discuss the UT procedures with Li Li Ming. At the time of this report, the QA inspector has not observed procedure, as described in the contract special provisions, being conducted.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

As noted above, the QA inspector Scott Croff had conversations with the QCL "Tom" Li Xiu Yang and "Eric" Xu Jun regarding the observed MT indication on fillet weld 014 of BP026-01. The QA inspector showed the QCLs the MT indication. The QA inspector was informed that the apparent crack would be repaired by grinding and re-inspection.

The QA inspector Scott Croff informed the QA inspector Bruce Berger of the above mentioned observations and conversations. The QA inspector then generated a summary report to be included in the daily shift notes. There were no other notable conversations during this shift.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Croff,Scott	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer
